

What is Claimed:

1. A method of cloning an endangered or extinct animal, comprising:
 - (1) isolating a somatic cell from an endangered or extinct animal;
 - (2) transferring the nucleus from said somatic cell into an enucleated
5 suitable recipient cell;
 - (3) activating said nuclear transfer unit;
 - (4) implanting said nuclear transfer unit into a suitable surrogate female;
and
 - (5) allowing said nuclear transfer unit to develop to at least the fetal stage,
10 thereby generating a clone of said endangered or extinct animal.
2. The method of claim 1, wherein said animal to be cloned is
endangered.
- 15 3. The method of claim 2, wherein said endangered animal to be cloned is
selected from the group consisting of gaur, African bongo antelope, Sumatran tiger,
Giant panda, Indian desert cat, mouflon sheep and rare red deer.
- 20 4. The method of claim 3, wherein said endangered animal to be cloned is
gaur, and said suitable recipient cell is an enucleated bovine oocyte.
5. The method of claim 4, wherein said suitable surrogate female is a
bovine.
- 25 6. The method of claim 5, wherein said clone develops to at least the late
fetal stage.
7. The method of claim 6, wherein said clone develops to at least the
neonatal stage.
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8. The method of claim 3, wherein said endangered animal to be cloned is
an African bongo antelope, and said suitable surrogate female is an eland.

9. The method of claim 3, wherein said endangered animal to be cloned is an Indian desert cat, a Sumatran tiger, or a cheetah, and said suitable surrogate female is a domestic cat.

5 10. The method of claim 3, wherein said endangered animal to be cloned is a Giant panda, and said suitable surrogate female is an American black bear, and said suitable recipient cell is an enucleated American black bear oocyte.

10 11. The method of claim 3, wherein said endangered animal to be cloned is a mouflon sheep, and said suitable female is a domestic sheep.

12. The method of claim 3, wherein said endangered animal to be cloned is a rare red deer, and said suitable surrogate female is a common white tailed deer.

15 13. The method of claim 1, wherein said somatic cell is isolated from a frozen sample of cells.

14. The method of claim 13, wherein said frozen cells are semen cells.

20 15. The method of claim 13, wherein said animal to be cloned is extinct.

16. The method of claim 15, wherein said extinct animal to be cloned is a buccardo mountain goat of Spain.

25 17. The method of claim 16, wherein said suitable recipient cell is an enucleated oocyte from a domestic goat.

18. The method of claim 17, wherein said suitable surrogate female is a domestic goat.

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19. A method for re-creating members of an extinct species, comprising:
(1) using nuclear transfer from frozen somatic cells to clone a male animal of an extinct species;

- (2) using nuclear transfer from frozen somatic cells to clone a female animal of an extinct species; and
- (3) breeding said male clone with said female clone to re-create members of said extinct species.

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20. A method of producing a sexual mate of an extinct animal, comprising:

- (1) isolating a somatic cell from said extinct animal;
- (2) removing the sex chromosome from said somatic cell;
- (3) inserting the alternative sex chromosome from a non-isogenic animal;

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and

- (4) using nuclear transfer to create an autosomally isogenic, sexually non-isogenic sexual mate of said extinct animal.

21. The method of claim 20, wherein said alternative sex chromosome is from an allogeneic somatic cell of the same extinct species that otherwise could not be used as a nuclear transfer donor.

22. The method of claim 20, wherein said alternative sex chromosome is from a xenogeneic cell.

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23. The method of claim 22, wherein said xenogeneic cell is from a species that is closely related to said extinct animal.

24. The method of claim 22, wherein said extinct animal is a female buccardo, and said xenogeneic cell is a domestic goat.

25. The method of claim 20, wherein said alternative sex chromosome is inserted via a microsome.

26. A method for re-creating members of an extinct species, comprising:

- (1) using nuclear transfer from frozen somatic cells to clone an extinct animal;
- (2) using the method of claim 20 to produce a sexual mate for said extinct animal; and

- (3) breeding said cloned extinct animal with said nuclear transfer-generated sexual mate to recreate members of said extinct species.

27. A method of correcting chromosomal abnormalities in the cells of an extinct animal, comprising:

- (1) isolating a somatic cell from a frozen sample of cells from an extinct animal;
- (2) removing at least one damaged chromosome from said isolated somatic cell;
- (3) inserting a functional non-isogenic chromosome into said isolated cell; and
- (4) using nuclear transfer to create a partial clone of said extinct animal.

28. The method of claim 27, wherein said functional, non-isogenic chromosome is inserted via a microsome.

29. The method of claim 27, wherein said non-isogenic chromosome is isolated from a separate sample of frozen cells taken from an allogeneic extinct animal.

30. The method of claim 27, wherein said non-isogenic chromosome is isolated from a xenogeneic animal, thereby creating a partial clone that is a hybrid of two species.

31. A method of cloning an extinct animal using nuclear transfer from the partial clone made by the method of claim 27.

32. An improved method for preserving and propagating an endangered species which reproduces poorly in zoos until habitat restoration is complete, comprising:

- (1) isolating a somatic cell from an animal of said endangered species;
- (2) transferring the nucleus from said somatic cell into an enucleated suitable recipient cell;
- (3) activating said nuclear transfer unit;

- (4) implanting said nuclear transfer unit into a suitable surrogate female;
and
- (5) allowing said nuclear transfer unit to develop into a clone of said endangered animal.

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33. The method of claim 32, wherein the suitable recipient cell is from a species other than said endangered species.

34. The method of claim 32, wherein the suitable surrogate female is from
10 a species other than said endangered species.

35. The method of claim 32 further comprising:
- (6) introducing said cloned animal into said restored habitat.

15 36. A method of cloning an endangered or extinct animal, comprising:

- (1) isolating a nucleus from a somatic cell of an endangered or extinct animal to be cloned;
- (2) transferring said nucleus from said somatic cell into an enucleated suitable recipient cell;
- 20 (3) activating said nuclear transfer unit;
- (4) implanting said nuclear transfer unit into a suitable surrogate female;
and
- (5) allowing said nuclear transfer unit to develop to at least the fetal stage,
thereby generating a clone of said endangered or extinct animal.

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37. The method of claim 36 wherein said nucleus is preserved in a preservative prior to nuclear transfer.

38. The method of claim 37 wherein said preservative is alcohol.

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39. The cloned endangered or extinct animal produced by the method of claim 1.

40. The sexual mate of an extinct animal produced by the method of claim
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41. The partially cloned extinct animal produced by the method of claim
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